REMARKS

This Amendment is responsive to the Office Action dated July 6, 2004. Applicant has amended claim 33 and added new claims 47-59. Claims 25-59 are pending.

Allowable Subject Matter

In the Office Action, the Examiner indicated that claim 33 would be allowable if rewritten in independent form. In this Amendment, Applicant has rewritten claim 33 in independent form. Accordingly, claim 33 should now be allowable.

Amendment to Specification

This application was filed as a Rule 53(b) continuation of application no. 08/882,561, filed July 2, 1997. At the time of filing, the transmittal letter accompanying the continuation application included an instruction to amend the specification to include the appropriate reference to the parent application under 35 U.S.C. 120 in the first paragraph. At the time this application was filed, the instruction to amend the specification was a proper way to add the required reference under section 120, although that is no longer the case according to current PTO practice.

Despite the amendment to the specification, the official filing receipt issued by the USPTO does not include Applicant's claim of priority or the relationship of the present application to application no. 08/882,561. On January 26, 2004, Applicant submitted a Request for Corrected Filing Receipt to add the appropriate continuing application data. To date, Applicant has not received a Corrected Filing Receipt. Applicant notes, however, that the PAIR system now correctly indicates that the present application is a continuation of the 08/882,561 application. Accordingly, it appears that Applicant's claim of priority has been accepted.

Nevertheless, in this Amendment, Applicant has again amended the specification to provide an appropriate reference under 35 U.S.C. 120 to the parent application. In this manner, the specification will now include the reference under 35 U.S.C. 120, which should have already been made effective by the amendment in the transmittal letter accompanying the application as originally filed. Applicant respectfully requests that the Examiner enter this amendment to the specification.

Claim Rejections Under 35 U.S.C. § 102

Swen et al.

In the Office Action, the Examiner rejected claims 25, 28, 30-32, 34, 35, 38, 41 and 44 under 35 U.S.C. 102(e) as being anticipated by Swen et al. (US 5,806,081). Applicant respectfully traverses the rejection.

Claims 25, 28, 30-32, 34, 35, 38, 41 and 44 require interpretation of a source device profile to convert coordinates in a source device color space to a device-independent color space, interpretation of a destination device profile to convert coordinates in a destination device color space to the device-independent color space, and generation of a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences. Notably, the user preferences are specified by a user independently of the source and destination device profiles, as specified in the claims.

In support of the rejection, the Examiner stated that Swen et al. discloses each and every feature of claims 25, 28, 30-32, 34, 35, 38, 41 and 44. In particular, with respect to claim 25, the Examiner asserted that Swen et al. teaches a color transformer that generates a color map based on converted coordinates, as claimed, as well as user preferences specified by a user independently of the source and destination profiles. The Examiner's interpretation of Swen et al. is incorrect.

With respect to the "user preferences" limitation, the Examiner referred to "a control panel interface by which users can set system profile." The control panel interface described by Swen et al. does not permit a user to specify user preferences that are used in conjunction with user profiles for the generation of a color map. Swen et al. does not describe a control panel interface for specifying user preferences independently of source and destination profiles. Instead, as clearly stated in Swen et al., the control panel interface permits a user to actually select a profile. In particular, the user sets a system profile, such as the "default system color profile that describes the gamut of the Apple RGB 13 inch monitor." Col. 2, lines 22-31.

Hence, the control panel interface does not permit the user to specify user preferences independently of color profiles. On the contrary, the control panel interface is directed precisely to the selection of the color profiles themselves. In this respect, the Swen et al. reference is directly at odds with the requirements of Applicant's claims. Rather than specifying user

preferences independently of the profiles, the control panel interface is actually used to select a profile.

The Examiner also pointed to a passage at col. 11, lines 20-21, where Swen et al. refers to "a user who wishes to temporarily modify the device profile." Again, this passage clearly relates to modification of a profile, and not specification of user preferences independently of such a profile. The distinction seems to be quite clear. In Swen et al., the user may select or modify a user profile, which is then used to convert color. In contrast, the claimed invention requires generation of a color map based not only on coordinates that have been converted using profiles, but also user preferences specified independently of the profiles. Accordingly, in accordance with the claimed invention, color map generation relies on converted coordinates produced by source and destination device profile interpreters and user preferences specified independently of the profiles.

The Examiner also pointed to the passage at col. 11, lines 36-42, where Swen et al. refers to modification of a device profile via the user interface. Once again, in this passage, Swen et al. describes modification of a device profile, rather than specifying user preferences independently of the profile. Accordingly, this passage of Swen et al. simply provides no suggestion of this feature of the claimed invention. There is simply nothing about the modification of a device profile, per Swen et al., that could be considered "independent" of that profile. Rather, the user modifications are directed at the profile.

With respect to claim 28, the Examiner stated that Swen et al. discloses a color transformer that adjusts source and destination device profile interpreters based on user preferences, citing Col. 2, lines 20-21, Col. 11, lines 20-21, and Col. 11, lines 36-42. None of the cited passages in Swen et al. provides any teaching pertinent to adjusting source and destination profile interpreters, as set forth in claim 28. In particular, Swen et al. describes modification of the profiles, but not interpreters that interpret the profiles. Upon appreciation of this fundamental difference, it should be clear that Swen et al. does not anticipate the system of claim 28. Swen et al. focuses on selection and modification of profiles themselves, rather than components, such as profile interpreters, that make use of the profiles.

As pointed out previously by Applicant, e.g., in the response dated April 9, 2004, by permitting the user to specify user preferences independently of the source and destination

profiles, the claimed invention provides greater flexibility and enhanced processing efficiency. Other color matching systems, such as that described by Swen et al., typically account for user preferences by making modifications to source and destination profiles. Consequently, if the user changes an illuminant function, observer function, or some other preference, the source and destination profiles ordinarily are recomputed.

On the contrary, according to the claimed invention, user preferences such as illuminant and observer functions can be decoupled from the source and destination profiles, and serve as independent inputs to a color transformer. As a result, with the claimed invention, there is no need to recompute the source and destination profiles when the user changes a preference such as illuminant function or observer function.

Instead, according to the claimed invention, a color transformer can rely on the existing profiles and process the changes to the user preferences independently of the profiles, e.g., via modifications to the source and destination profile interpreters. Accordingly, the claimed invention permits ease and flexibility in specifying user preferences while avoiding the need to update the profiles in some circumstances.

With respect to claim 30, the Examiner pointed to Col. 8, lines 52-57, of Swen et al., as teaching configuration of source and destination device profile interpreters based on white- and black-point parameters to account for color variations between media and colorants used by different color display devices. However, the cited passage in Swen et al. merely describes the setting of a specific rendering intent. It is unclear how this feature relates to the requirements of claim 30. Applicants respectfully requests clarification of the relevance of this passage in Swen et al.

With respect to claim 31, the Examiner merely pointed to FIGS. 2 and 3 of Swen et al. However, it is not immediately clear which aspect of those figures relates to the configuration of the source and destination device profile interpreters based on pleasing color corrections. Accordingly, Applicant respectfully requests clarification.

With respect to claim 32, the "error" identified in FIGS. 7 and 9 relates to various error conditions (e.g., when a particular color matching method (CMM) is not available, or when insufficient memory is available) and have nothing to do with generating a color map in part by

reducing color error between converted coordinates from source and destination device profile interpreters, as claimed.

With respect to claim 34, nothing in the passage at Col. 5, lines 3-10, of Swen et al. provides any teaching that would have suggested the use of source device profile containing raw spectral data that characterizes a source device, and a destination device profile containing raw spectral data that characterizes a destination device. On the contrary, the cited passage indicates that a device profile simply includes data relating a device's color space, gamut, tonal reproduction curves and preferred CMM. There is simply no mention of raw spectral data in this passage of Swen et al.

With respect to claim 35, it is unclear what aspect of Swen et al. suggests that each of the source and destination device profiles defines a forward transformation. Applicant can find no mention of the use of forward profiles in the passages cited by the Examiner. Instead, Swen et al. simply refers to the contents of a profile and conversion between different color spaces.

With respect to claims 38, 41, and 44, Applicant refers to the remarks above with respect to claim 25, as applicable.

In summary, Swen et al. lacks several basic features set forth in Applicant's claims, and fails to support a prima facie case of anticipation. In particular, with respect to the limitations recited in claims 25, 38, 41, and 44, Swen et al. describes modification of color profiles, rather than specification of user preferences independently of source and destination device profiles, as claimed. Accordingly, the rejection under section 102(e) is improper and should be withdrawn.

Ring et al.

In the Office Action, the Examiner rejected claims 25-32 and 34-46 under 35 U.S.C. 102(3) as being anticipated by Ring et al. Applicant respectfully traverses the rejection.

Like Swen et al., the Ring et al. reference fails to disclose or suggest interpretation of a source device profile to convert coordinates in a source device color space to a device-independent color space, interpretation of a destination device profile to convert coordinates in a destination device color space to the device-independent color space, and generation of a color map defining a relationship between the source and destination device color spaces based on the

converted coordinates and user preferences specified by a user independently of the source and destination device profiles, as required by Applicant's claims.

With respect to claim 25, the Examiner pointed to Ring et al., at Col 2, lines 46-49, Col. 4, lines 40-49, Col. 8, lines 45-50, Col. 6, lines 14+, and Col. 9, lines 16-20, for a teaching of a color transformer that generates a color map defining a relationship between source and destination device color spaces based on converted coordinates and user preferences specified by a user independently of the source and destination device profiles. The passages cited by the Examiner provide no teaching that would have suggested such features. The passages are each addressed by Applicant below.

At Col. 2, lines 46-49, Ring et al. describes image processing operations, such as color substitution and cut/paste, that can be performed within an intermediate color data metric. It is unclear how this passage of Ring et al. is relevant to the requirements of claim 25. Although the user apparently selects the operations to be performed, the operations are not user preferences that are used, along with converted coordinates produced using device profiles, in the generation of a color map, as required by Applicant's claims. It seems that the Examiner has placed undue significance upon the fact that a user performs the operations. Whether a user performs them or not, the image processing operations described by Ring et al. play no role as user preferences in the generation of a color map. Rather, they are simply image processing operations applied to modify a particular image.

At Col. 4, lines 40-49, Ring et al. refers to the characterization of the tristimulus response of color input and output devices, and the relation of those responses to CIE colorimetric values. Ring et al. notes that the tristimulus response can be obtained for an input scanning device using color input targets having known CIE colorimetry and illuminant conditions. Hence, in this passage, Ring et al. appears to merely describe a basic objective in any color matching system, i.e., characterization of the colorimetric response of an imaging device. This passage of Ring et al. otherwise appears to have no relevance to the requirements of Applicant's claims, particularly the generation of a color map based on user preferences specified independently of the source and destination device profiles.

At Col. 8, lines 45-50, Ring et al. describes the ability of a user to modify an entire image, e.g., by sharpening, making adjustments, or performing cut and paste operations. Such

operations are performed within the intermediate color space. Again, although the operations may be performed by a user, they have nothing to do with the generation of a color map. Rather, the image processing operations are simply applied to a particular image without regard to any color map. Therefore, this passage in Ring et al. is completely irrelevant, and provides no suggestion of the claimed invention.

At Col. 6, lines 14+, Ring et al. describes the application of a visual adaptation transform that accounts for chromatic adaptation differences of a human observer under different viewing conditions. In particular, Ring et al. describes conversion of a first set of tristimulus values to a second set of tristimulus values in a manner that compensates for chromatic adaptation differences. Hence, Ring et al. contemplates the existence of different viewing conditions. Ring et al. makes no mention, however, of the generation of a color map based on both converted coordinates and user preferences specified by a user independently of source and destination device profiles, as required by Applicant's claims. Indeed, the Examiner cited no teaching in Ring et al. that even refers to the specification of user preferences.

At Col. 9, lines 16-20, Ring et al. states that correction must be made for differences in observer chromatic adaptation between input viewing conditions and internal color metric reference viewing conditions. Again, Ring et al. simply refers to the application of a transform to account for chromatic adaptation differences, and makes no mention whatsoever of the generation of a color map based on both converted coordinates and user preferences specified by a user independently of source and destination device profiles, as required by Applicant's claims.

Rather, as indicated in each of FIGS. 5-8, the result of the process described by Ring et al. is the formulation of a device profile, e.g., a scanner profile or monitor profile. Hence, like Swen et al., Ring et al. contemplates techniques for generation of device profiles, rather than the use of such profiles in conjunction with user preferences specified independently of the profiles, as required by Applicants' claims. In view of this basic difference, the rejection under section 102 is improper and should be withdrawn.

In summary, the claimed invention focuses on the generation of a color map using source and destination profiles that have already been formulated, in conjunction with user preferences specified by a user independently of the profiles. Again, the ability to accommodate user preferences, e.g., in a color transformer or device profile interpreter, can avoid the need to

recompute the device profiles. Instead, the same profiles can be used to generate the color map. Yet, the color map can be adjusted to evaluate the effects of user preferences specified independently of the profiles. Applicant considers this to be a very clear distinction that separates the claimed invention from the teachings of the Swen et al. and Ring et al. references.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 26-27, 29-30, 34, 36-37, 39-40, 42-43 and 45-46 under 35 U.S.C. 103(a) as being unpatentable over Swen et al. in view of Ring et al. (US 5,754,184). Applicant respectfully traverses the rejection.

For the reasons already discussed above, it is clear that the applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention. Ring et al. provides no teaching sufficient to bridge the gap between the Swen et al. reference and the claimed invention, particularly in light of the deficiencies already noted above with respect to both Swen et al. and Ring et al.

Ring et al. offers no additional teaching that would have suggested modification of the Swen et al. system to generate a color map based on converted coordinates produced using source and destination profiles and user preferences specified independently of the profiles, as set forth in Applicant's claims. Moreover, neither Swen et al. nor Ring et al. provides any teaching that would have suggested the desirability of such a modification in the Swen et al. system.

Rather, the desirability of a modification to generate a color map used converted coordinates produced using source and destination device profiles and user preferences specified independently of such profiles would have been evident only upon access to Applicant's own disclosure, which is impermissible. Therefore, Swen et al. and Ring et al. cannot support a prima facie case of obviousness with respect to Applicant's claims.

New Claims

Applicant has added claims 47-59 to the pending application. New claims 47-53 require features similar to those set forth in amended claim 33. New claims 54-59 require interpretation of a source device profile to convert coordinates in a source device color space to a device-

independent color space, interpretation of a destination device profile to convert coordinates in a destination device color space to the device-independent color space, and generation of a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences specified by a user independently of the source and destination device profiles, wherein the source and destination device profiles are not modified based on the user preferences. Claim 54 further requires a color transformer that adjusts the source and destination device profile interpreters based on the user preferences.
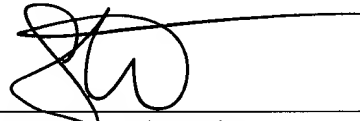
CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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